George Mason University
MATH 125 006 – Discrete Mathematics I
Course Syllabus – Spring 2022
Location: Horizon Hall 2014 M/W 5:55-7:10pm

Instructor: Dr. Timothee Bryan
Email: tbryan5@gmu.edu
Office Hours: Exploratory Hall 4407 M/W 4:30 – 5:30pm, T/R 3:00-4:00pm and by appointment

Email: Please be sure to include your first and last name as well as course and section # in the body of the email.

Course Objectives: Introduces ideas of discrete mathematics and combinatorial proof techniques including mathematical induction, sets, graphs, trees, recursion, and enumeration. The course requires a serious time commitment, both in attendance and outside time for homework and studying.

Course Materials: *Discrete Mathematics with Graph Theory* by Goodaire and Parmenter (Third edition, Pearson publisher). ISBN: 978-0-13-468955-5

Blackboard: The syllabus, class handouts, and announcements will be posted on Blackboard. Please check Blackboard regularly for any class related information as well as your student email, as announcements will also be sent to you via email. Grades will also be posted in the Blackboard Grade Center.

Class Attendance and Extra Credit: It is my firm belief that active student participation improves the course outcomes for both you and me. To encourage your attendance and participation, you will have the opportunity to complete 14 weekly assignments while only being graded for 12. Any additional points will improve your exam scores.

Extra Credit: There is no extra credit. Please do not ask. However,…if you earn more than 120 homework points, you will get credit for them. For example, if you earn 134 homework points, it is the same as earning 120 homework points and an additional 14 points toward your exams.

Grading Policy: Your course grade will be computed using the following breakdown:

120 points Weekly Homework (Note: 140 points are possible)
140 points Exam 1, Wednesday, March 23 5:55-7:10pm
140 points Exam 2, Tuesday, May 16 4:30-7:15pm

Grading Scale: Your letter grade will be determined as follows:

Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade
93 – 100 %	A	90 – 92 %	A-	87 – 89 %	B+	83 – 86 %	B	80 – 82 %	B-
77 – 79 %	C+	73 – 76 %	C	70 – 72 %	C-	60 – 69 %	D	0 – 59 %	F

Exams: There will be **no make-up exams**. A missed exam counts as a zero unless a valid excuse from a physician or the Dean's Office is presented to your instructor and accepted. You need to contact your instructor as soon as possible regarding your extenuating circumstance for consideration of an exception.

You are not permitted to use any outside materials, resources, or electronic devices (including but not limited to non-approved calculators, mobile phones, smartwatches, etc.) on the exams. Any violation of this policy is a violation of the university's academic integrity policy.

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Homework: Weekly homework will be worked upon and submitted during class on Wednesdays. Working in groups is allowed, but each student is required to submit their own homework. Barring an approved absence, if you do not turn in an assignment on Wednesday, you will not be able to make it up.

Late Assignment Policy: Late assignments will not be accepted. If you have an extenuating emergency/situation, please contact your instructor as soon as possible.

Inclement Weather: Check the university webpage in the event of inclement weather. In addition, please check your email and Blackboard for course specific information.

Students with Disabilities: George Mason University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. My goal as your instructor is to create a learning environment that are useable, equitable, inclusive, and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, I invite you to meet with me to discuss additional strategies beyond accommodations that may be helpful to your success. If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS). Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see https://ds.gmu.edu/). Since accommodations may require early planning and are not provided retroactively, please contact ODS as soon as possible.

Academic Integrity: Mason shares in the tradition of an honor system that has existed in Virginia since 1842. Mason's Honor System was inaugurated in 1963 when the college was a satellite of the University of Virginia. The code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Students are responsible, therefore, for understanding the code's provisions. In the spirit of the code, a student's word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing in academic matters constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty members must report all alleged violations to the Honor Committee. For more information and the complete policy, see https://catalog.gmu.edu/policies/honor-code-system/ .

Use of Student Work: In compliance with the federal Family Educational Rights and Privacy Act, registration in this class is understood as permission for assignments prepared for this class to be used anonymously in the future for educational purposes.

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Tentative Lecture Schedule:

Week	Sections Covered	Topic
Week #1 – Week of 1/23	Syllabus, 0.1, 1.1	Compound Statements, Truth Tables
Week #2 – Week of 1/30	1.2, 1.3	The Algebra of Propositions, Logical Arguments
Week #3 – Week of 2/6	2.1, 2.2	Sets, Operations on Sets
Week #4 – Week of 2/13	2.3, 2.4	Binary Relations, Equivalence Relations
Week #5 – Week of 2/20	3.1, 3.2	Basic Terminology, Inverses and Composition
Week #6 – Week of 2/27	5.2, 5.3	Recursively Defined Sequences, Solving Recurrence Relations, The Characteristic Polynomial
Week #7 – Week of 3/6	6.1, 6.2	The Principles of Inclusion-Exclusion (PIE), The Addition and Multiplication Rule
Week #8 – Week of 3/13	No Class	
Week #9 – Week of 3/20	Review, **Exam 1: 3/23**	Chapters 1-6
Week #10 – Week of 3/27	7.1, 7.2	Permutations, Combinations
Week #11 – Week of 4/3	7.3, 7.4	Elementary Probability, Probability Theory
Week #12 – Week of 4/10	9.1, 9.2	A Gentle Introduction, Definition and Basic Properties
Week #13 – Week of 4/17	9.3, 10.1	Isomorphisms, Eulerian Circuits
Week #14 – Week of 4/24	10.2, 10.4	Hamiltonian Cycles, Shortest Path Algorithms
Week #15 – Week of 5/1	12.1, 12.2	Trees and Their Properties, Spanning Trees
Week #16 – Week of 5/8	No Class	
Week #17 – Week of 5/15	**Exam 2: 5/16**	Chapters 7-12